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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|---|---|---|---|
| 10/724,514 | 11/26/2003 | Sim Dong-Hi | 2060-3-92A | 1835 |

35884 7590 01/12/2009

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| EXAMINER | |
|---|---|
| GHULAMALI, QUTBUDDIN | |

| ART UNIT | PAPER NUMBER |
|---|---|
| 2611 | |

| NOTIFICATION DATE | DELIVERY MODE |
|---|---|
| 01/12/2009 | ELECTRONIC |

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

USPTO@LHLAW.COM
ip.lhlaw@gmail.com
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| Office Action Summary | Application No. | Applicant(s) | |
|---|---|---|---|
| | 10/724,514 | DONG-HI ET AL. | |
| | Examiner | Art Unit | |
| | Qutbuddin Ghulamali | 2611 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on *02 October 2008*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *20,21 and 32-37* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *20-21, 32-37* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *5/21/08,11/18/08*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

## DETAILED ACTION

1. This office action is in response to amendment filed 10/02/2008.

### *Information Disclosure Statement*

2. The information disclosure statement of 7/29/2008 and 5/21/2008, have been corrected for improper serial number.

### *Response to Arguments*

3. Applicant's remarks/amendment page 6-7, filed 10/02/2008 respect to claim 20-21 and 32-37 as amended, have been considered. The remarks pertaining to Kim failing to disclose each of at least two data blocks is transmitted via each of a plurality of antennas and a receiving side transmits ACK or NACK for each of the at least two data blocks, is rendered moot because applicant's remarks were applicable to claims that have now been cancelled. The applicability of remarks to Kim that pertains to claims 20 and 32, is addressed in the rejection to follow.

### *Claim Rejections - 35 USC § 103*

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 20-21, 32-37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Li et al (US Pub. 2006/0209765) in view of Kim et al (US Pub. 2002/0004924) and further in view of Corrigan (USP 6,901,551).

Regarding claim 20, Li discloses a signal processing apparatus, comprising: a signal reception unit for receiving at least two data blocks via at least one of a plurality of antennas, each of the at least two data blocks (first block and a second data block, page 1, section 0012) with cyclical redundancy check (CRC) wherein each of the at least two data blocks has been transmitted via each of a plurality of antennas at a transmitting side (page 1, section 0007; a cyclic extension can be added by subsystem 26 prior to transmission by an antenna and the same is received by a receive portion or unit 32) (abstract; page 1, section 0006, 0007, 0012);
a channel estimation unit (a channel parameter estimator CPE) for checking the CRC from each of the received at least two CRC attached data blocks (page 1, section 0007, 0012; page 2, section 0025, 0026). Li; does not explicitly disclose a feedback signal transmission unit transmitting a positive acknowledgement (ACK) or a negative acknowledgement (NACK) for each of the at least two data blocks, the ACK or NACK based on CRC check. However, Kim discloses a feedback signal reception unit receiving status information of at least one channel according to the CRC check results) in a plurality of antennas (as disclosed in page 1, section 0008, 0009, 0011; page 2, section 0020, a feedback of reception signal is inherently implied and is implicitly and explicitly shown with reference to fig. 1A as a reverse operation of ACK/NAK from

receiver to transmitter). It would have been obvious to one skilled in the art at the time of the invention to utilize a feedback signal transmission unit transmitting the channel status information as taught by Kim in the system of Li because it can provide source data transmission errors in original signal to improve the system performance. The combination of Kim and Li disclose all limitations of the claim except CRC is independently attached to each of the at least two data blocks. However, Corrigan discloses a plurality of data blocks wherein each data block is shown independently CRC attached (col. 4, lines 42-64). It would have been obvious to a person of ordinary skill in the art at the time the invention was made to use data with independently attached CRC as taught by Corrigan in the combined apparatus of Kim and Li because the use of CRC for each one or more data blocks can mitigate errors in storing and retrieving of critical data effectively and reliably by allowing check of the integrity of data being transferred or transmitted to different parts of the system.

Regarding claim 21, Kim, Li and Corrigan combined disclose all limitations of the claim above, except antennas not selected for transmitting CRC attached data blocks are used to transmit dummy bit. Transmit of bits or dummy or redundant bit attachment to otherwise known bits are well known in the art of communications and to attach dummy bits would be obvious to a person of skill in the art to utilize for transmission.

Regarding claim 32, the steps claimed as method is nothing more than restating the function of the specific components of the apparatus as claimed above and therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to represent the claim in an alternate way so as to realize steps

of the method as claimed, considering the aforementioned rejection for the apparatus claim 20.

Regarding claim 33, Kim, Li and Corrigan combined disclose all limitations of the claim above, except any of the plurality of antennas not used for transmitting CRC is used for dummy bits. To transmit dummy bits is well known in the art and to attach dummy bits would be obvious to a person of skill in the art to utilize for transmission.

As to claim 34, Kim discloses CRC check is performed to acquire channel quality information (page 2, section 0018; page 5, section 0065).

Regarding claim 35, Kim discloses channel quality information is based on quality of the channel through which the CRC-attached data block is transmitted (page 2, section 0018; page 1, section 0011).

Regarding claim 36, Kim discloses the ACK is generated if the channel quality information is good (page 1, section 0011).

As per claim 37, Kim discloses the NACK is generated if the channel quality information is bad (page 1, section 0011).

***Contact Information***

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Qutbuddin Ghulamali whose telephone number is (571)-272-3014. The examiner can normally be reached on Monday-Friday, 7:00AM - 4:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chieh M. Fan can be reached on (571) 272-3042. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

QG.
December 13, 2008.

/Chieh M Fan/
Supervisory Patent Examiner, Art Unit 2611